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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/029,287 | 12/28/2001 | Seung Gyu Lee | K-0377 | 3127 |

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EXAMINER

KOVAL, MELISSA J

ART UNIT PAPER NUMBER

2851

DATE MAILED: 12/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,287

Applicant(s)

LEE, SEUNG GYU

Examiner

Melissa J Koval

Art Unit

2851

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because -- focused -- is incorrectly spelled "foused" in Figure 9. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Figure 6, shows no reference characters.

Applicant should carefully review all of the Figures, accordingly.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: -- Thin Projector --.

The disclosure is objected to because of the following informalities: On page 4 of the specification, line 11, "lamp 34" is referred to, seemingly in a discussion of Figure 5. However no "lamp 34" is shown therein. Later referring to Figure 8, an "optical input surface 34, is discussed on page 8, line 13. Therefore, two different parts are erroneously identified by the same reference character. On page 8 of the specification, Figure 6 is referred to in lines 17 through 20 and reference characters are discussed therein, however no reference characters are shown in Figure 6. Also on page 8, line

18, the meaning of the following is unclear: "area of optical input surface \geq area of optical output surface -----(1)" because the information does not form a complete sentence.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 sets forth: " A projector as claimed in claim 7, wherein the two polarization beam split planes are located at a center part of the polarization beam sprite array in a triangular form." With respect to claim 8, a further point of reference is required. It is not clear how two polarization beam split planes are arrayed in a triangular form when a third surface is required for a triangular formation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application

published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-4 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by
Sawai et al. ('862)

Refer to Figure 5 of Sawai et al. for example.

Claim 1 sets forth: "A projector comprising:

a light source for emitting beams of lights (light source 21);

a rod lens for receiving the beams of lights from the light source for
making a distribution of the beams uniform (kaleidoscope 22); and,

a polarization beam converter (relay optical system 24) having a lens part
for receiving the beams from the rod lens and focusing onto a plurality of focusing points
(convex lenses 24a and 24b), and polarization beam sprite array for receiving the
beams inclusive of a P wave and an S wave (PBS prism array 25), and forwarding the P
wave as it is, and converting the P wave into the S wave before forwarding. With
respect to the operation of the polarizing beam splitter of Sawai et al., refer to column
14, lines 30 through 43. The limitations of claim 4 are also met by the teaching set forth
therein.

With respect to claim 2, reflector 21b of the embodiment shown in Figure 5
of Sawai et al. is described as an ellipsoidal reflector, thus meeting the limitations of
claim 5.

With respect to claim 3, the cross-section of kaleidoscope 22 of Figure 5 of Sawai et al., is described in the last two lines of column 13 and lines 1 through 9 of column 14.

With respect to claim 7, refer to column 14, lines 44 through 57.

Claim 8 is met by the PBS prism array 25, shown by Sawai et al. as far as the terms and limitations of the claim language can be understood. Wedge shaped prism portions for comprising beam splitter arrays are well known in the art.

With respect to claim 9, refer to the half-wavelength plates 26 as described and shown with respect to the embodiment of Figure 5 of Sawai et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawai et al. ('862) in view of Jung ('420).

Sawai et al. teach all of the elements set forth in claim 5, including color splitting means, i.e. dichroic mirrors 27; however as seen in Figure 5 the mirrors are located after kaleidoscope 22. Therefore, Sawai et al. teach everything with the exception of the exact arrangement of parts comprising the projector. It would have been obvious to one having ordinary skill in the art at the time the invention was made

to optically arrange the beam splitting means between the light source and the kaleidoscope, since it has been held that rearranging of parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

Furthermore, Jung teaches a similar projection system to that of Sawai et al. The color splitting means of Jung is a color wheel. In the Prior Art disclosed by Jung shown therein in Figure 1, a color wheel situated between the light source and the light rod is shown. In an embodiment of the invention shown in Figure 5 of Jung, the color wheel is optically arranged after the light rod. Therefore Jung teaches that it is well known in the art for color separation means to be optically rearranged within varying embodiments of a projection system. Claim 6 is rejected for the same reasons applied to already rejected claim 5.

Conclusion

The art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ito U.S. Patent Application Publication US 2002/0180933 A1 teaches a projector.

Furuhata et al. U.S. Patent Application Publication US 2002/0060779 A1 teaches a projector.

Lee U.S. Patent Application Publication US 2002/0085179 A1 teaches a projector.

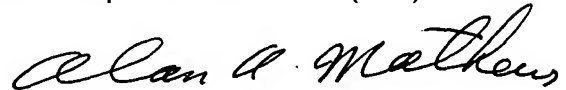
Lee U.S. Patent Application Publication US 2002/0085180 A1 teaches an image projector.

Art Unit: 2851

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J Koval whose telephone number is (703) 308-4801. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on Monday through Thursday at (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Alan A. Mathews
Primary Examiner

MJK
December 23, 2002